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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,019	11/26/2003	Jeffrey Hunt	7784-0649DVA	8858

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EXAMINER	
PRITCHETT, JOSHUA L	
ART UNIT	**PAPER NUMBER**
2872	

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/723,019	HUNT, JEFFREY	
	Examiner	Art Unit	
	Joshua L Pritchett	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 26 November 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrante (US 5,847,876) in view of Yasunori (US 6,417,619).

Regarding claims 1, 4, 10, 13, 15 and 17, Ferrante teaches a fingerprint-resistant anti-reflection coating comprising an upper thin film layer to be exposed to an ambient environment, the upper layer having an optical path equal to a quarter wave at a pre-selected wavelength in the range of about 450-550 nanometers (Fig. 1). Ferrante further teaches a lower thin film layer to interface a substrate, the lower layer having a greater index of refraction than the upper layer (col. 5 lines 8-15), the lower layer having an optical path length equal to a half wave at the pre-selected design wavelength in the range of about 450-550 nanometers (Fig. 1). Ferrante further teaches wherein the reflectance of light from the fingerprint-resistant two-layer anti-reflection coating when applied to plastic substrates is essentially the same in oil and the ambient environment (col. 5 lines 28-30). Ferrante lacks a plastic substrate and the index of refraction of

the lower layer being at least 0.5 greater than the upper layer. Ferrante further lacks reference to ion beam deposition. Yasunori teaches the use of titanium oxide as a bottom layer in a fingerprint-resistant film (col. 9 lines 45-50) and titanium dioxide has a refractive index of 2.7 (specification of current application page 6), which is at least 0.5 greater than any of the materials taught by Ferrante. Yasunori teaches that ion beam deposition in known as a method of depositing antireflection layer (col. 10 lines 1-9). It is also well known to one of ordinary skill in the art to switch from glass to plastic substrates in order to reduce the possibility of fracturing or cracking of the glass substrate. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the lower layer of Ferrante be made of titanium dioxide as taught by Yasunori for the creating a thinner coating because the optical thickness is defined as the refractive index multiplied by the physical thickness, therefore increasing the refractive index allows the physical thickness to decrease while maintaining the optical thickness of the material. It would also have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Ferrante antireflection layers deposited with ion beam deposition as taught by Yasunori for the purpose of precise deposition of the antireflection layers on the substrate. It would also have bee obvious to one of ordinary skill in the art at the time the invention was made to have the substrate of Ferrante be made of plastics as is commonly known in the art for the reasons discussed above.

Regarding claims 2, 5, 8, 11, 14, 16, 17 and 21, Ferrante teaches the use of silicon dioxide as the upper layer (col. 5 lines 8-10). Ferrante further teaches the pre-selected wavelength being 500 nanometers (Fig. 1).

Regarding claims 3, 9, 12 and 22, Ferrante teaches the upper layer should have a refractive index close to that of oil (col. 4 lines 44-49). The refractive index of aluminum oxide is known to be 1.63 and the refractive index of oil is known to be from 1.5-1.6. Ferrante further teaches the pre-selected wavelength being 500 nanometers (Fig. 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to replace the silicon dioxide upper layer with aluminum oxide for the purpose of more closely matching the refractive index of oil.

Regarding claims 6 and 19, Ferrante teaches that it is known to have a refractive index of the substrate equal 1.52 (Fig. 3). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the refractive index of the Ferrante substrate equal the value of a commonly known and used substrate in the art for the purpose of limiting the amount of light reflection at the substrate-air interface on the backside of the substrate from the coating.

Regarding claims 7 and 20, it is commonly known to one of ordinary skill in the art that the ambient environment (air) has a refractive index of 1.0. Ferrante teaches the upper layer should have a refractive index of about 1.5 (col. 4 lines 41-49), because the upper layer should have a refractive index close to that of oil, which is known to have a refractive index of 1.5-1.6 (col. 4 lines 41-49).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP

DREW A. DUNN
SUPERVISORY PATENT EXAMINER